DETAILED ACTION

1.   This application is responsive to application number (10787182) filed on

February 27, 2004. Claims 1-14 are pending and have been examined.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August

18, 2009 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.,* 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.

4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

4.   Claims 1- 4, 6-11, and 13-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Zakhor et al (US 5,699,121, hereafter Zakhor) in view of Sekiguchi et al (US 2004/0131268, hereafter Sekiguchi).

As per **claim 1**, Zakhor disclose image encoding apparatus (Fig 1 element 20) comprising:

conversion (Fig 1 element 60) means for converting coding target blocks within a coding target image into conversion information (col 4 lines 50-61);

quantization (Fig 1 element 100) means for quantizing the conversion information and generating quantized conversion information (col 6 lines 26-27); and

encoding (Fig 1 element 100) means for generating compression data by encoding the quantized conversion information based on the size of the block, and for generating a compression code used to generate the compression data for each block size (column 4 lines 40-58, column 5 lines 34 – 35, and col 6 lines 26-37; Zakhor discloses the present takes in an NxN input and codes the signal and further refers to the coding of block, which suggest that blocks of image data is being coded), wherein

the encoding means adopts the block size and compression code having a minimum bit rate among the plurality of generated compression codes, and includes the block size and compression code corresponding to the lowest bit rate (col 4 lines 50-58 and col 5 lines 1-28; Zakhor discloses how using the pattern matcher is advantageous for

low bit rates and that the closest pattern is found which corresponds to the lowest bit rate)

However, Zakhor does not explicitly teach the block size and compression code corresponding to the lowest bit rate is included in header information.

In the same field of endeavor, Sekiguchi discloses encoding means for generating compression data by encoding the quantized conversion information based on a plurality of sizes of blocks (Fig 1 element 113, paragraph [0065] lines 21—26, paragraph [0066], [0074]-[0078]; Sekiguchi teaches that there are different coding modes depending on the number of blocks created in a macroblock, which results in varying block sizes),

the block size and compression code corresponding to the lowest bit rate is included in header information (Fig 10, paragraph [00154] lines 7 – 11)).

Therefore, it would have been obvious for one having ordinary skill in the art at the time of the invention to modify the invention of Zakhor to the compression mode and header of Sekiguchi. The advantage is that variations in the image content produced between previous and future frames is easily predicted, thus making it possible to effectively reduce temporal redundancy still further (paragraph [0068] lines 8 – 10).

As per **claim 2**, Zakhor discloses an image encoding apparatus according to claim 1, further comprising:

dictionary storage (Fig 1 element 80) means for storing a plurality of bases (col 4 lines 59-67),

wherein the conversion means converts the coding target image into the

conversion information including index information for specifying a basis used for

decomposition of the coding target image among the plurality of bases (col 4 line 59 –

col 29),

a coefficient by which the basis specified by the index information is multiplied

(col 5 lines 14-18), and

positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored,

based on a predetermined conversion rule (col 5 lines 16-18),

the encoding means generates the compression data including the compression

codes based on a predetermined compression encoding rule (col 6 lines 26-27), and

for each block size, the encoding means executes processing in which the

encoding means divides the coding target image into a plurality of blocks, extracts, for

each of the plurality of blocks, the quantized conversion information the positional

information of which is included in the block (col 5 lines 16-18 and col 6 lines 26-37),

encodes, for each of the plurality of blocks, a flag for specifying existence of the

quantized conversion information the positional information of which is included in the

block (col 5 lines 16-18 and col 6 lines 26-37; the atom described in the art is the flag),

encodes, for each of the plurality of blocks, the number of items of quantized conversion

information each of which includes the positional information included in the block,

converts the positional information of the quantized conversion information into inter-

block positional information specifying a relative position in the block in which the

positional information is included, and encodes the quantized conversion information

(col 5 lines 14-28 and col 6 lines 22-37).

As per **claim 3**, arguments analogous to those presented for claim 1 are

applicable to claim 3.

As per **claim 4**, arguments analogous to those presented for claim 2 are

applicable to claim 4.

As per **claim 6**, Zakhor discloses an image encoding method to claim 4, wherein,

the encoding step further comprises using arithmetic coding as the predetermined

compression encoding rule and executing the arithmetic coding using predetermined

probabilities stored in a table having different values according to the size of the block

(col 6 lines 26-37).

As per **claim 7**, arguments analogous to those presented for claim 1 are

applicable to claim 7.

As per **claim 8**, arguments analogous to those presented for claim 1 are

applicable to claim 8.

As per **claim 9**, arguments analogous to those presented for claim 2 are

applicable to claim 9.

As per **claim 10**, arguments analogous to those presented for claim 1 are

applicable to claim 10.

As per **claim 11**, arguments analogous to those presented for claim 9 are

applicable to claim 11

Regarding **claim 13**, arguments analogous to those presented for claim 6 are

applicable for claim 13.

As per **claim 14**, arguments analogous to those presented for claim 8 are

applicable to claim 14.

5.   Claims 5 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over et

al (US 5,699,121, hereafter Zakhor) in view of Sekiguchi et al (US 2004/0131268,

hereafter Sekiguchi) in further view of Abe (US 5,805,737).

As per **claim 5**, Zakhor discloses an image encoding method according to claim

4, wherein

the quantization step further includes quantizing the coefficient included in the

conversion information to generate the quantized conversion information including a

quantized coefficient,(col 6 lines 26-30).

However, Zakhor does not explicitly teach when encoding the quantized

conversion information includes extracting a minimum absolute value among absolute

values of the quantized coefficients included in a plurality of items of quantized

conversion information, determining a code relating to the minimum absolute value in

the compression data, converting each of the quantized coefficients into a differential

value between the absolute value for each of the quantized coefficients and the

minimum absolute value, including the differential values in the compression code after

encoding, and including a positive or negative sign for each of the quantized coefficients in the compression code after encoding.

In the same field of endeavor, Abe discloses when encoding the quantized conversion information includes extracting a minimum absolute value among absolute values of the quantized coefficients included in a plurality of items of quantized conversion information, determining a code relating to the minimum absolute value in the compression data, converting each of the quantized coefficients into a differential value between the absolute value for each of the quantized coefficients and the minimum absolute value, including the differential values in the compression code after encoding, and including a positive or negative sign for each of the quantized coefficients in the compression code after encoding (Col 6 Ln 41-56).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify invention of with the invention of Abe. The advantage of combining the two inventions would be to provide better coding efficiency.

Regarding claim 12, arguments analogous to those presented for claim 5 are applicable for claim 12.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is

(571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am

to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax

phone number for the organization where this application or proceeding is assigned is

571-273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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